

# Lake Echo

# Power Station

## Derwent Catchment

Lake Echo Power Station is located on the shores of the Dee Lagoon. The power station was commissioned in 1956 and houses a single English Electric Francis turbine coupled to an English Electric generator.

Water is diverted from Lake Echo by a single 2.5 kilometre-long flume and 700 metre-long canal. It then drops 168 metres through a single steel penstock to the power station with a surge tower located midway along the penstock.

The turbine has a fully embedded spiral casing and water flow is controlled by a straight flow main inlet valve and a relief valve designed to prevent spiral casing overpressure.

There is a diversion constructed to bypass water from Lake Echo Dam to Dee Lagoon without passing through the power station in case the machine is not available for service. This is only used under extreme circumstances.

Lake Echo is one of the main headwater storages for Dee Lagoon, Bradys, Binney, Tungatinah Lagoons and Lower Derwent River catchments, releasing water to a further seven stations downstream.

The power station output is fed to TasNetworks' transmission grid via one 3-phase 11 kV/110 kV generator transformer and dual 110 kV outdoor switchgear.



### Fast facts

<b>Scheme:</b>	Upper Derwent
<b>Year commissioned:</b>	1956
<b>Power station structure:</b>	<ul style="list-style-type: none"> <li>• 28 m long x 16 m wide</li> <li>• Services block adjacent to the assembly bay</li> </ul>
<b>Static head:</b>	173 m
<b>Generating set:</b>	<ul style="list-style-type: none"> <li>• Vertical shaft generating set</li> <li>• 32.4 MW Francis turbine</li> <li>• Directly coupled 3-phase, 50 Hz, 36 MVA synchronous generator</li> </ul>
<b>Turbine manufacturer:</b>	English Electric
<b>Generator manufacturer:</b>	English Electric
<b>Rated head:</b>	168 m
<b>Rated output:</b>	36 MVA
<b>Rated discharge:</b>	23 m <sup>3</sup> /s
<b>Power factor:</b>	0.9
<b>Rated speed:</b>	428 rev/min
<b>Rated voltage:</b>	11kV

